

# Alzheimer's: The Growing Challenge

By David Olson, M.D.

Alzheimer's disease is increasingly common. Its incidence increases with age and some have even nicknamed it the "Baby Boomer Plague." Alzheimer's may afflict up to 50% of Americans 85 years of age or older, and while the majority of patients with Alzheimer's reside with their families, up to 40% may require institutional care at some point in their illness.

Alzheimer's can only be definitely diagnosed with criteria updated from Dr Alzheimer's original 1906 description of the deposition of plaques and tangles in the cerebral cortex. In the last two decades, molecular understanding of Alzheimer's has accelerated with the identification of several genes coding for proteins that make up the plaques. These genes are mainly implicated in early Alzheimer's disease.

Most current Alzheimer's treatments focus on repleting acetylcholine, a neurotransmitter disrupted early in the onset of Alzheimer's. While these treatments offer "statistical" benefits, real clinical improvements in individual patients occur infrequently. Nevertheless, treatment with these acetylcholine replerers lessens the chance that a patient will need nursing home care early in their course of disease by about one third.

Since our current treatments offer only modest benefits, more definitive therapies are in the offing. The most immediately promising of these treatments focus on either dissolving amyloid plaques using the immune system (the so-called amyloid vaccine) or blocking plaque formation with enzyme inhibitors.

Preventive measures may also help stave off the dementing process. For instance, a 2006 study shows that regular exercise reduced Alzheimer's by about one third. Because Alzheimer's is associated with atherosclerotic heart disease, hypertension, and diabetes, others have speculated that more aggressive control of cholesterol, blood pressure, and blood glucose will lessen the Alzheimer burden.

As the molecular puzzle of Alzheimer's is further unraveled, it is likely we will have more definitive treatments than our current, modest efforts. Future treatments will lessen the burden on families and other long-term care providers. Hopefully, a deeper understanding of Alzheimer's pathophysiology will ultimately lead to disease prevention.

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